

are required, make arrangements to get them before you start. It is frustrating and time-consuming to get partly into a job and then be unable to complete it.

Simple wiring checks can be easily made at home, but a knowledge of electronics is almost a necessity for performing tests with complicated electronic testing gear.

During disassembly of parts keep a few general cautions in mind. Force is rarely needed to get things apart. If parts are a tight fit, such as a bearing in a case, there is usually a tool designed to separate them. Never use a screwdriver to pry apart parts with machined surfaces such as crankcase halves. You will mar the surfaces and end up with leaks.

Make diagrams (or take a Polaroid picture) wherever similar-appearing parts are found. For instance, crankcase bolts are often not the same length. You may think you can remember where everything came from, but mistakes are costly. There is also the possibility you may be sidetracked and not return to work for days or even weeks, in which interval carefully laid out parts may have become disturbed.

Tag all similar internal parts for location and mark all mating parts for position. Record number and thickness of any shims as they are removed. Small parts such as bolts can be identified by placing them in plastic sandwich bags. Seal and label them with masking tape.

Wiring should be tagged with masking tape and marked as each wire is removed. Again, do not rely on memory alone.

Protect finished surfaces from physical damage or corrosion. Keep gasoline off painted surfaces.

Frozen or very tight bolts and screws can often be loosened by soaking with penetrating oil, such as WD-40 or Liquid Wrench, then sharply striking the bolt head a few times with a hammer and punch (or screwdriver for screws). Avoid heat unless absolutely necessary, since it may melt, warp or remove the temper from many parts.

No parts, except those assembled with a press fit, require unusual force during assembly. If a part is hard to remove or install, find out why before proceeding.

Cover all openings after removing parts to keep dirt, small tools, etc., from falling in.

When assembling 2 parts, start all fasteners, then tighten evenly.

Wiring connections and brake components should be kept clean and free of grease and oil.

When assembling parts, be sure all shims and washers are installed exactly as they came out.

Whenever a rotating part butts against a stationary part, look for a shim or washer. Use new gaskets if there is any doubt about the condition of the old ones. A thin coat of oil on gaskets may help them seal effectively.

Heavy grease can be used to hold small parts in place if they tend to fall out during assembly. However, keep grease and oil away from electrical and brake components.

High spots may be sanded off a piston with sandpaper, but fine emery cloth and oil will do a much more professional job.

Carbon can be removed from the head, the piston crown and the exhaust port with a dull screwdriver. *Do not* scratch the surfaces. Wipe off the surface with a clean cloth when finished.

The carburetor is best cleaned by disassembling it and soaking the parts in a commercial carburetor cleaner. Never soak gaskets and rubber parts in these cleaners. Never use wire to clean out jets and air passages; they are easily damaged. Use compressed air to blow out the carburetor only if the float has been removed first.

A baby bottle makes a good measuring device for adding oil to the engine, transmission or forks. Get one that is graduated in fluid ounces and cubic centimeters. After it has been used for this purpose, do not let a small child drink out of it as there will always be an oil residue in it.

Take your time and do the job right. Do not forget that a newly rebuilt engine must be broken in the same as a new one. Keep the rpm within the limits given in your owner's manual when you get back in the dirt or sand.

## TORQUE SPECIFICATIONS

Torque specifications throughout this manual are given in Newton meters (N•m) and foot pounds (ft.-lb.). Newton meters have been adopted in place of meter kilograms (mkg) in accordance with the International Modernized Metric System. Tool manufacturers offer torque wrenches calibrated in Newton meters and Sears has a Craftsman line calibrated in both values.

Existing torque wrenches calibrated in meter kilograms can be used by performing a simple conversion. All you have to do is move the decimal point one place to the right; for example, 4.7 mkg = 47 N•m. This conversion is sufficient for use in this manual even though the exact mathematical conversion is 3.5 mkg = 34.3 N•m.

## SAFETY FIRST

Professional mechanics can work for years and never sustain a serious injury. If you observe a few

rules of common sense and safety, you can enjoy many hours servicing your own machine. If you ignore these rules you can hurt yourself or damage the ATC.

1. Never use gasoline as a cleaning solvent.
2. Never smoke or use a torch in the vicinity of flammable liquids such as cleaning solvent in open containers.
3. If welding or brazing is required on the ATC, remove the fuel tank to a safe distance, at least 50 ft. (15 m) away.
4. Use the proper sized wrenches to avoid damage to nuts and injury to yourself.
5. When loosening a tight or stuck nut, watch out for what might happen if the wrench should slip. Be careful; protect yourself accordingly.
6. Keep your work area clean and uncluttered.
7. Wear safety goggles during all operations involving drilling, grinding or the use of a cold chisel.
8. Never use worn tools.
9. Keep a fire extinguisher handy and be sure it is rated for gasoline and electrical fires.

### SPECIAL TIPS

Because of the extreme demands placed on an ATC, several points should be kept in mind when performing service and repair. The following items are general suggestions that may improve the overall life of the machine and help avoid costly failures.

1. Use a locking compound such as Loctite 242 on all bolts and nuts, even if they are secured with lockwashers. This type of Loctite does not harden completely and allows easy removal of the bolt or nut. A screw or bolt lost from an engine cover or bearing retainer could easily cause serious and expensive damage before its loss is noticed.

When applying Loctite, use a small amount. If too much is used, it can work its way down the threads and enter bearings or seals.

2. Use a hammer-driven impact tool to remove tight fasteners. These tools help prevent the rounding off of bolt heads.
3. When straightening out the "fold over" type lockwasher, use a wide-blade chisel such as an old and dull wood chisel. Such a tool provides a better purchase on the folded tab, making straightening out easier.

4. When installing the "fold over" type lockwasher, always use a new washer if possible. If a new washer is not available, always fold over a part of the washer that has not been previously folded.

Reusing the same fold may cause the washer to break, resulting in the loss of its locking ability and a loose piece of metal adrift in the engine.

When folding the washer over, start the fold with a screwdriver and finish it with a pair of pliers. If a punch is used to make the fold, the fold may be too sharp, thereby increasing the chances of the washer breaking under stress.

These washers are relatively inexpensive and it is suggested that you keep several of each size in your tool box for field repairs.

5. When replacing missing or broken fasteners (bolts, nuts and screws), especially on the engine or frame components, always use Honda replacement parts. They are specially hardened for each application. The wrong 75-cent bolt could easily cause many dollars worth of serious damage, not to mention rider injury.

6. When installing gaskets in the engine, always use Honda replacement gaskets *without* sealer, unless otherwise designated. These gaskets are designed to swell when they come in contact with oil. Gasket sealer will prevent the gaskets from swelling as intended, which can result in oil leaks. These Honda gaskets are also cut from material of the precise thickness needed. Installation of a too thick or too thin gasket in a critical area could cause engine damage.

### PARTS REPLACEMENT

Honda makes frequent changes during a model year—some minor, some relatively major. When you order parts from the dealer or other parts distributor, always order by engine and frame number. Write the numbers down and carry them with you. Compare new parts to old before purchasing them. If they are not alike, have the parts manager explain the difference to you.

### EXPENDABLE SUPPLIES

Certain expendable supplies are also required. These include grease, oil, gasket cement, wiping rags and cleaning solvent. Ask your dealer for the special locking compounds, silicone lubricants and lube products which make ATC maintenance simpler and easier. Cleaning solvent, kerosene and diesel fuel are available at many service stations.

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